

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA

v.

S1 22 Cr. 644 (JSR)

STEVEN PEREZ,
a/k/a “Lucha,”

Defendant.

**THE GOVERNMENT’S OPPOSITION TO THE DEFENDANT’S MOTION
TO PRECLUDE TESTIMONY OF ANDREW PETERSOHN**

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PRELIMINARY STATEMENT

In the defendant's opposition to the Government's motions *in limine*, the defendant raised—for the first time—a challenge to the testimony of proposed cell site location information expert Andrew Petersohn. (Dkt. 62 (“Def. Opp.”) 11–12). That untimely challenge should be denied for the reasons described below.

BACKGROUND

On July 28, 2023, the Government notified the defendant that it intended to call Andrew Petersohn, a professional engineer from dBm Engineering, to provide expert testimony regarding historical cell site records created by T-Mobile pursuant to Federal Rule of Evidence 702. (*See* Ex. A (Petersohn expert notice)). Petersohn is a licensed professional engineer who has been working in the telecommunications, radio frequency design, and cellular network industry for over 20 years. Petersohn has a Bachelor of Science and Master of Engineering, both in the field of electrical engineering. Since 1997, Petersohn has worked as an employee or contractor for multiple cellular service providers, including T-Mobile, Verizon, AT&T, Nextel (subsequently purchased by Sprint), and Bell Atlantic, and has extensive experience in the design and testing of cellular networks. In addition, he has analyzed call detail records (“CDRs”) from cellular service providers throughout his career and has performed cell site analysis over a dozen times, including in conjunction with expert testimony in this District. (*See* Ex. A at 4–5). Indeed, this Court and other courts in this District have repeatedly denied *Daubert* motions challenging Petersohn's testimony. *See United States v. Scales*, No. 19 Cr. 96 (JSR) (Dkt. 183) (rejecting *Daubert* challenge to Petersohn's testimony after hearing); *United States v. Ray*, No. 20 Cr. 110 (LJL), 2022 WL 101911, at *8 (S.D.N.Y. Jan. 11, 2022) (same without hearing); *United States v. Hampton*, No. 21 Cr. 766 (JPC) (Dkts. 91, 100) (same without hearing). A transcript of the *Daubert* hearing in *Scales*, No. 19 Cr. 96 (JSR) (Dkt. 203) (the “*Scales* Hearing Tr.”) is attached as Exhibit B.

At the trial in this case, the Government anticipates Petersohn will testify that analyzing cell site location data from CDRs is a reliable way to approximate the geographical area where a cellphone was likely located at the time it connected to a cell site. Petersohn will explain that cellphones are designed to connect to the cell site that provides the strongest and clearest signal, which is typically the cell site that is closest to the cellphone. He will further explain that cellphones may not always connect to the closest cell site for a variety of reasons, including obstructions (e.g., tall buildings), topography (e.g., valleys or mountains), or network traffic (e.g., large events in which an influx of people overloads a site). Even when the nearest cell site does not provide the strongest and clearest signal, Petersohn has learned from his experience, including his participation in hundreds of drive tests and performance analysis tests, that such a signal is almost always provided by the second-, or at most third- or fourth-nearest cell site. In a densely populated urban area such as the Bronx, New York, cell sites typically serve an area of a few city blocks to ensure sufficient geographical coverage and capacity to all users. Consequently, even the second-, third-, or fourth-closest cell sites are still near a phone.

In this case, Petersohn has analyzed T-Mobile CDRs for four cellphone numbers that were used by the defendant (the “Perez Phone”), Keith Vereen (the “Vereen Phone”), Jamil Bey (the “Bey Phone”), and Ricardo Rodriguez (the “Rodriguez Phone”) (collectively, the “Phones”). Petersohn will testify that the cell site location information for the Vereen Phone is consistent with the user of that phone making four roundtrips from South Carolina to New York between on or about September 14, 2020, and on or about November 3, 2020. On each of the trips, the Vereen Phone connected to the same cell sites in the Bronx as the Perez Phone at approximately the same time, suggesting that the two were located near one another. In addition, on two of the trips, the

Vereen Phone connected to cell sites in the same general area in the Bronx as the Bey Phone and the Rodriguez Phone.¹

Petersohn is anticipated to testify that he has used Google Street View to view historical images from in and around September through November 2020 to verify the cell sites to which the Phones connected, as well as the geography, topography, and environmental and man-made factors that might affect the functioning of cell sites. With respect to the cell sites in the Bronx that the Phones commonly connected to, Petersohn has not found any obstructions or issues outside of those that usually exist in urban areas. Based on his review of these factors, Petersohn will testify that such analysis is a reliable way to approximate the geographical area within which the Phones were likely located at the time of their cell site connections.

ARGUMENT

Despite receiving the Government's expert notice more than two weeks before the motion *in limine* deadline, the defendant moved for the first time in his opposition papers filed on August 21, 2023 to preclude Petersohn's testimony or hold a *Daubert* hearing. The defendant does not dispute that Petersohn is qualified as an expert on cell site location information. (Def. Opp. 12). Instead, the defendant argues that (i) Petersohn's testimony should be precluded because historical cell site location information is not reliable at all, (*id.* at 12–13), and (ii) in the event such testimony is permitted, Petersohn's maps of cell site location information should be precluded as confusing and misleading, (*id.* at 13–14). The Court should deny this belated motion as meritless without a hearing.

¹ In addition to testimony about the cell site location information for these four phones, Petersohn, based on his analysis of the CDRs, will testify as to the timing of certain calls made, and text messages sent, using each of the Phones.

I. Applicable Law

Under Federal Rule of Evidence 702, where “specialized knowledge will help the trier of fact,” an expert witness may give opinion testimony if “[1] the testimony is based on sufficient facts or data; [2] the testimony is the product of reliable principles and methods; and [3] the expert has reliably applied the principles and methods to the facts of the case.” The party proffering expert testimony bears the burden of demonstrating, by a preponderance of the evidence, that the expert testimony is admissible. *See United States v. Williams*, 506 F.3d 151, 160 (2d Cir. 2007). The court must “ensur[e] that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” *Daubert v. Merrell Dow*, 509 U.S. 579, 597 (1993); *accord Amorgianos v. Nat’l R.R. Passenger Corp.*, 303 F.3d 256, 265 (2d Cir. 2002).

In considering the reliability of proffered expert testimony, a court must determine “whether the reasoning or methodology underlying the [expert’s] testimony is . . . valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592–93; *see also United States v. Kwong*, 69 F.3d 663, 668 (2d Cir. 1995). Although *Daubert* itself dealt exclusively with “scientific” evidence, 509 U.S. at 589 n.8, the Supreme Court has held that “the basic gatekeeping obligation” of *Daubert* “applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.” *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999). It is well established that “[t]he fact that the subject matter is not ‘scientific’ is no bar to admissibility of expert testimony.” *United States v. Romano*, 794 F.3d 317 (2d Cir. 2015). As the Second Circuit has observed, “Rule 702 itself refers to ‘other specialized knowledge,’ . . . and there are many different kinds of experts, and many different kinds of expertise.” *Id.* Under this analysis, “[c]ourts have generally found historical cell-site analysis to be reliable and admissible.” *United States v. Morgan*, 45 F.4th 192, 202 (D.C. Cir.), *cert. denied*, 143 S. Ct. 510 (2022) (collecting cases); *see also United States v.*

McNeal, 763 F. App'x 307, 309 (4th Cir. 2019) (finding that historical cell site analysis has been “broadly tested and accepted by the scientific community and the federal courts alike”); *United States v. Gatson*, 744 F. App'x 97, 102 (3d Cir. 2018) (agreeing with district court that historical cell site analysis was reliable); *United States v. Pembroke*, 876 F.3d 812, 824–25 (6th Cir. 2017) (rejecting defendant’s argument that cell site analysis has not been objectively tested or subjected to peer review), *vacated on other grounds by Pembroke v. United States*, 139 S. Ct. 68 (2018); *United States v. Schaffer*, 439 F. App'x 344, 347 (5th Cir. 2011) (“Testimony established that the field is neither untested nor unestablished.”).

Daubert identified factors that a trial court might find useful in evaluating the reliability of testimony: (i) whether the theory or technique used by the expert can be, and has been, tested; (ii) whether the theory or technique has been subjected to peer review or publication; (iii) the known or potential rate of error of the method used; (iv) whether there are standards controlling the technique’s operation; and (v) whether the theory or method has been generally accepted within the relevant scientific community. 509 U.S. at 593–94. “But the Rule 702 inquiry [i]s a flexible one, and *Daubert* makes clear that the factors it mentions do not constitute a definitive checklist or test.” *United States v. Romano*, 794 F.3d 317, 330 (2d Cir. 2015) (internal quotation marks and citation omitted). Moreover, “the gatekeeping inquiry must be tied to the facts of a particular case.” *Id.* (citations omitted). Accordingly, “in some ‘cases, the relevant reliability concerns may focus upon personal knowledge or experience.’” *Id.* (quoting *Kumho Tire*, 526 U.S. at 150). Even in the *Daubert* context, factors such as “peer review” are not determinative. *Kumho Tire*, 526 U.S. at 150; *see also United States v. Mack*, No. 13 Cr. 54 (MPS), 2014 WL 6474329, at *4 (D. Conn. Nov. 19, 2014) (“[The cell-site witness’s] methods are not rendered unreliable merely because they have not been validated by scientific peer review. Peer review is but one of many factors to

be considered in judging the reliability of expert testimony. And, as the Advisory Committee Note for the 2000 Amendment to Rule 702 points out, the rule itself and the *Kumho Tire* opinion contemplate that the foundation for an expert's testimony *may be based on experience alone.*" (emphasis added)).

Accordingly, the touchstone of the district court's gatekeeping function under *Daubert* or *Kumho Tire* is reliability. Rule 702 codifies a liberal admissibility standard and "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert*, 509 U.S. at 596.

II. The Court Should Deny the Defendant's Motion to Preclude Petersohn's Testimony

The defendant now moves to preclude Petersohn's testimony on the basis that historical cell site location information is not reliable and is thus categorically inadmissible. (*See* Def. Opp. 12–13). There is no reason for the Court to stray from its prior rulings admitting historical cell site analysis at trial. As described below, Petersohn's anticipated testimony satisfies Rule 702, just as it has in past cases. The issues of the kind raised by the defendant—to the extent they have any merit—go to the weight of the evidence, rather than its admissibility, and can be explored through cross-examination.

The defendant asks the Court to preclude all testimony from Petersohn because, the defendant contends, cell site analysis is unreliable. But courts, including this one, have routinely rejected challenges to the reliability of cell site analysis. *See, e.g., United States v. Rosario*, No. 09 Cr. 415 (VEC), 2014 WL 6076364, at *3 (S.D.N.Y. Nov. 14, 2014) (collecting cases and admitting cell site analysis under Rule 702 after rejecting identical arguments asserted by defendant); *United States v. Walker*, No. 16 Cr. 567 (JSR) (Dkt. 87 ("*Walker* Hearing Tr.") at 608) (admitting evidence of historical cell site analysis at trial under Rule 702 following a *Daubert*

hearing); *United States v. Austin*, No. 06 Cr. 991 (JSR), 2020 WL 6788068, at *4 (S.D.N.Y. Nov. 18, 2020) (crediting testimony from expert regarding the location of a cell phone during an evidentiary hearing); *United States v. Gyamfi*, No. 16 Cr. 521 (JSR) (admitting expert witness' testimony about historical cell site analysis). In fact, the Government is aware of no court that has precluded cell site analysis wholesale on the basis that it is unreliable. Consistent with these decisions, challenges to Petersohn's testimony based of the alleged unreliability of cell site analysis and his methodology for conducting it have failed. *See Scales*, No. 19 Cr. 96 (JSR) (Dkt. 183 at 1) (rejecting challenge to Petersohn's testimony based on reliability of historical cell site analysis after hearing); *Hampton*, No. 21 Cr. 766 (JPC) (Dkt. 100 at 19 ("I find the CSLI to which Mr. Petersohn expects to testify to be reliable and, in particular, his proffered CSLI methodology to be sufficiently reliable."); *Ray*, 2022 WL 101911, at *7 (finding that "[t]here is no reason to question Petersohn's methodology" and that "[t]he concerns raised by [the defendant] go to the weight of [his] testimony and not to its admissibility").

The Court should find, as it has before, that Petersohn's testimony satisfies Rule 702. As required by that rule, his proposed testimony is based on sufficient facts and data. Petersohn's expected testimony rests on data in records from service providers, which are maintained by those companies in order to provide reliable service to their customers. *See Ray*, No. 20 Cr. 110 (LJL), 2022 WL 101911, at *7 (finding that phone companies have a "financial interest in [the] accuracy" of these records and that "there is no reason to question their reliability"). Similarly, the data regarding the physical locations of the cell sites themselves is also provided by T-Mobile to the National Domestic Communications Assistance Center ("NDCAC") and is reliable for the same reasons. In addition, Petersohn will testify that he has used historical Google Street View images

to verify the locations of cell sites to which the Phones connected and to investigate any potential obstructions.

In addition, Petersohn's testimony is based on reliable principles and methods, which he has reliably applied to this case. As set forth at length above, the Government expects that Petersohn will explain in detail how cell site networks operate and how location analysis is a reliable means to approximate a phone's location at the time of a cell site connection. He will explain, based on his education, training, and experience, that (1) cellphones connect to the clearest, strongest available signal, (2) the nearest cell site usually (though not always) provides the strongest signal, and (3) even when cellphones do not connect to the nearest cell site, they are very likely to connect to the second-, third-, or fourth-closest cell site, which are also physically close to the phone, especially in urban areas such as the Bronx. This testimony will be consistent with testimony offered in prior cases in this District where Petersohn's cell site analysis was admitted. *See Scales* Hearing Tr. 6–14 (providing overview of methodology of cell site analysis in *Daubert* hearing); *Hampton*, No. 21 Cr. 766 (JPC) (Dkt. 110 at 758–65) (providing similar overview of methodology at trial after *Daubert* challenge was denied).² Petersohn will further explain that he analyzed data from CDRs for the four Phones to determine the cell sites they connected to at particular times between September and November 2020, and that he used that information to draw conclusions about the approximate location of those devices.

² Petersohn's description of the methodology of cell site analysis is consistent with that allowed in other cases. *See, e.g., Rosario*, 2014 WL 6076364, at *2 (summarizing historical cell-site analysis); *Walker* Hearing Tr. 585–88 (providing same overview of methodology).

The defendant raises a variety of arguments as to why cell site is allegedly an unreliable way to approximately the location of a cellphone, but none of these arguments is persuasive or renders cell site evidence categorically inadmissible.

First, the defendant argues that cell site location information is not reliable because cellular companies do not gather CDRs with the intent that they be used for law enforcement, and the companies do not monitor them for accuracy. (Def. Mem. 12). While the defendant correctly notes that cellular companies create and maintain these records for billing purposes rather than law enforcement purposes, “the providers have a financial interest in their accuracy” and thus “there is no reason to question their reliability” on this basis. *Ray*, 2022 WL 101911, at *7.

Second, the defendant claims that CDRs do “not necessarily include[]” changes in cell sites during a given call. (Def. Mem. 12). Whether or not this alleged phenomenon is true for a particular call—T-Mobile records, for example, may provide information about the first and last cell site a phone connected to during a call—does not render cell site wholly unreliable because cell site evidence “need not pinpoint a cellphone’s precise location to be relevant and helpful evidence for the jury.” *Hampton*, No. 21 Cr. 766 (JPC) (Dkt. 100 at 20). Instead, this argument, which the defendant can raise on cross-examination, “speak[s] to the weight of Mr. Petersohn’s testimony, rather than its admissibility.” *Id.* (rejecting argument that allegedly misrouted 911 calls made cell site unreliable); *see also Ray*, 2022 WL 101911, at *8 (rejecting argument that known issue with particular Verizon records, in which Verizon recording the “terminating” cell site location rather than the “originating” cell site location, did not render cell site unreliable).

Third, the defendant argues that cell site location information does not have “documented error rates or validation methodologies[.]” (Def. Mem. 12 (citation omitted)). This too does not bar cell site evidence. Indeed, although “[a] mathematical error rate has not been calculated, . . .

the technique [of cell site analysis] has been subjected to publication and peer criticism, if not peer review.” *United States v. Hill*, 818 F.3d 289, 298 (7th Cir. 2016) (citing Matthew Tart, et al., *Historical Cell Site Analysis—Overview of Principles and Survey Methodologies*, 8 Digital Investigation 185–86 (2012); Aaron Blank, *The Limitations and Admissibility of Using Historical Cellular Site Data to Track the Location of a Cellular Phone*, 18 Rich. J.L. & Tech. 3–5 (2011); Herbert B. Dixon Jr., *Scientific Fact or Junk Science? Tracking A Cell Phone Without GPS*, 53 Judges’ J. 37 (2014)). Even so, courts in this District have repeatedly found that the *Daubert* factors, including whether there is a known error rate, are not relevant to a determination of whether cell site location information is reliable, *see Hampton*, No. 21 Cr. 766 (JPC) (Dkt. 100 at 21), and have rejected challenges to cell site analysis based on the lack of a known error rate, *Ray*, 2022 WL 101911, at *6.

Fourth, the defendant claims that any cell site evidence should be precluded because “[m]aps using CDR are based on the assumption that cell phones register to the nearest tower, which is just not true.” (Def. Mem. 12). Petersohn would not disagree—and in fact, will address the limitations of CDRs in his testimony on direct examination. As described above, Petersohn will explain that sometimes the closest cell site does not provide the strongest signal to a cellphone because of, among other things, obstructions, natural topography, or network traffic affecting signal strength. However, even when a cellphone does not connect to the geographically closest cell site, the cellphone will still connect to another nearby site because that is how cellular networks and phones are designed and tested to function. As courts have explained, “[t]hese vagaries of cell phone technology affect the persuasiveness of the circumstantial evidence, but they do not render [the witness’s] testimony inadmissible.” *Rosario*, 2014 WL 6076364, at *2; *see Ray*, 2022 WL

101911, at *7 (explaining that concerns regarding cell site not connecting to closest tower “go to the weight of the expert’s testimony and not to its admissibility”).³

Fifth, the defendant raises a concern that “juries may be inclined to view [historical cell site location information] in a similar category as Global Positioning System (GPS) data, which is and was designed to be a reliable indicator of location.” (Def. Mem. 12–13). But Petersohn will explain the differences between cell site data and GPS data and that he will be testifying to cell site, rather than GPS data.

In sum, none of the arguments raised by the defendant affect the admissibility of cell site location information as a whole.

Nor has the defendant shown any need for a *Daubert* hearing. The defendant is not challenging Petersohn’s qualifications, and courts, including this one, have repeatedly held that cell site location information is a reliable way to approximate the location of a cellphone. *See, e.g., Rosario*, 2014 WL 6076364, at *3. Indeed, this Court previously held a *Daubert* hearing on Petersohn’s testimony, and then rejected a challenge to preclude his expert testimony based on the reliability of cell site analysis. *See Scales*, No. 19 Cr. 96 (JSR) (Dkt. 183 at 1). Since then, courts in this District have denied challenges to Petersohn’s testimony without a hearing. *See Ray*, 2022

³ *See also, e.g., United States v. Fama*, No. 12 Cr. 186 (WFK), 2012 WL 6102700, at *4 (E.D.N.Y. 2012) (holding that possibility of cellphone connecting to other towers “concern the weight of [cell-site witness’s] testimony, and it is the province of the jury to decide what weight, if any, to give such testimony”); *United States v. Jones*, 918 F. Supp. 2d 1, 5 (D.D.C. 2013) (“Moreover, to the extent that Agent Eicher’s testimony relies on assumptions about the strength of the signal from a given cell tower, any challenges to those assumptions go to the weight of his testimony, not its reliability.”); *Mack*, 2014 WL 6474329, at *4 (same); *Walker* Hearing Tr. 608 (Court: “I find under Rule 702 that there is a basis for his testifying. He may not use the word ‘footprint,’ he may not use the word ‘science,’ and I think he has to qualify his opinions by saying ‘more likely than not.’ But I will, with those reservations, allow the testimony.”).

WL 101911, at *8; *Hampton*, No. 21 Cr. 766 (JPC) (Dkts. 91, 100). This Court can and should take judicial notice of findings it and other courts have made on this topic, both with respect to the reliability of cell site evidence generally and with respect to Petersohn's expertise. *United States v. Jakobetz*, 955 F.2d 786, 799 (2d Cir. 1992). As such, the Court should deny both the defendant's request for a *Daubert* hearing and his motion to preclude Petersohn's testimony.

III. The Court Should Deny the Defendant's Motion to Preclude Petersohn's Maps

The defendant separately argues that if the Court allows Petersohn to testify, it should preclude the maps he has created, which contain his cell site analysis. (*See* Def. Mem. 13–14). The defendant claims that the maps would mislead the jury because they “have little verbal explanation of what is depicted, provide no measurements, and contain shading and arrows” that the defendant asserts are confusing. (*Id.* at 13). This argument is entirely unfounded. Although the defendant claims that Petersohn's maps lack written explanation, that argument is belied by the maps themselves, the latest iteration of which is attached as Exhibit C. The maps contain explanations of the date and time range covered, the devices shown, the type of data being analyzed (i.e., voice and SMS messages), the type of cell site that a particular device connected to, and the time of that connection. In addition, the maps often include detail about the calls that the devices are making. But even if the maps did not contain any such writings, the defendant's objection to their admissibility “is not well-founded” because “[t]he maps themselves need not explain in words what they purport to be showing as long as they are fair and accurate and not misleading and the expert is prepared to explain the maps[,]” as Petersohn is. *Ray*, 2022 WL 101911, at *5 n.2.

Petersohn will, of course, explain the maps when he testifies, greatly decreasing any risk that the jury will be confused.

Before showing the jury a map specific to this case, Petersohn will explain, for example, that the shading on his maps indicates the direction of the sector to which the cellphone connected,

rather than any assertion that the cellphone is located within the shading. As he walks through the maps, he will also explain that he has used overlapping, color-coded shading on certain slides, such as slide 20, to indicate that multiple devices connected to the same cell site. In addition, he has used arrows and color-coding to visually link call out boxes containing the name of a device and the time(s) of its connection to a particular cell site—providing exactly the verbal explanation that the defendant claims is missing.⁴

Accordingly, the Court should deny the defendant’s motion to preclude Petersohn’s maps.

⁴ The defendant cites to the transcript of a conference in *Ray* in which Judge Liman asked the Government to adjust maps that contained circles of differing sizes that were meant only to indicate the presence of cell sites but perhaps “could be read, misleadingly, to suggest that a cellphone was located within them rather than to identify the location of a cell site.” *United States v. Ray*, No. 20 Cr. 110 (LJL), 2022 WL 558146, at *21 (S.D.N.Y. Feb. 24, 2022); *see also id.* (Dkt. 404 at 17). Defense counsel and the court suggested using, instead of circles, “a dot and arrows” to indicate where the cell site to which a cellphone connected was located. (*See id.* (Dkt. 404 at 16)). The maps in this case do not have that same concern. Petersohn has used lines that connect to make a pie shape—rather than circles of varying sizes—to indicate where the cell sites to which certain devices connected are located.

CONCLUSION

For the foregoing reasons, the defendant's motion to preclude the testimony of Andrew Petersohn should be denied.

Dated: New York, New York
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Respectfully submitted,

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